

31 MARCH 1995



Manpower and Organization

**AIR FORCE MANAGEMENT ENGINEERING
PROGRAM (MEP)--LOGISTICS COMPOSITE
MODEL (LCOM)**

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Supersedes AFR 25-7, 1 March 1987.

Pages: 5
Distribution: F

This manual provides information that may be used to conduct an LCOM study. It provides an overall system description to include basic responsibilities. It applies to any project officer responsible for the quantification of requirements associated with an LCOM Module.

Section A—System Description and Responsibilities

1. System Description. The LCOM system is a large scale computer simulation used to model manpower and other logistical requirements. It considers employment of different support resources to help the user decide the best mix to support a given requirement. LCOM simulation capabilities range from very small to very large weapon systems and include various other functions that lend themselves to simulation modeling. LCOM manpower studies may be developed for one or more locations or weapon systems. Because LCOM studies can identify peacetime and wartime requirements, the studies provide a more defensible budget position and allow for effective use of available resources.

2. Responsibilities. HQ AFMEA:

- 2.1. Maintains, modifies, documents, distributes, and implements the standard LCOM system. Reviews requests for LCOM system changes, evaluates the change's impact on customers, informs the requester of planned action, and makes the appropriate changes.
- 2.2. Maintains a schedule of software developments activities.

Section B—Scenario Development

3. Description. The scenario provides the basic operational concepts and specific maintenance policies that impact a study. The scenario states the study objectives including where the data audit validation will take place and the time period covered. Scenarios are developed by the MAJCOM M & O and coordinated with the logistics, operations, and plans staffs to assure operational and maintenance concepts are accurately outlined in the scenario.

4. Scenario Requirements. Each LCOM study addresses all applicable operational environments. Each scenario should state the modeling features to be used in the study and contain the following information:

4.1. Study Objective:

- 4.1.1. Define purpose and scope of study.
- 4.1.2. Identify locations to be used for failure data collections and the associated time period covered.
- 4.1.3. Identify locations for field measurements and data validation if required.

4.2. Organization Alignment:

- 4.2.1. State the organization levels being studied.
- 4.2.2. Identify the deployment environment being modeled, primary aircraft assigned (PAA), and level of maintenance at each deployment location.
- 4.2.3. Identify the organizational structure appropriate to the studied units and include organization chart. List the organization structure codes (OSC) and provide the functional account code (FAC) and manpower determinant for each work center.

4.3. Manpower Data:

- 4.3.1. Identify the man-hour availability factors (MAF) to be used.
- 4.3.2. Use the appropriate MAJCOM indirect factors to determine maximum utilization factors.
- 4.3.3. Provide policies that will be used for the employment of alert-dedicated personnel.
- 4.3.4. Provide manpower shift policies for each operational environment.

4.4. Supply Data:

- 4.4.1. Provide not-mission-capable supply (NMCS) rates for applicable to each operational environment.
- 4.4.2. Identify the supply concept applicable to each operational environment.

4.5. Support Equipment and Facilities. Identify special equipment available at home or at deployed location that is applicable to model.

4.6. Maintenance RRequirements:

- 4.6.1. Maintenance policies and concepts that will be modeled
- 4.6.2. Remote versus home station maintenance modeling criteria.
- 4.6.3. Launch and recovery modeling criteria.
- 4.6.4. Whether cannibalization will be modeled.

4.7. Operations Requirements:

- 4.7.1. Mission type and percent.
- 4.7.2. Substitution rules for use of alternate configurations.

- 4.7.3. Modeling criteria for ground alert. Provide alert data showing the number of aircraft on alert by location, replacement policy (replace when launched, or same aircraft returns to alert), duration of alert cycle, and disposition of aircraft at end of alert cycle.
- 4.7.4. Weather modeling criteria.
- 4.7.5. Percentage of air aborts by mission.
- 4.7.6. Policies for modeling ground or air spare aircraft.
- 4.7.7. Criteria for modeling complimentary missions and mission legs with restricted time frames.
- 4.7.8. Criteria for modeling mass launches.
- 4.7.9. Information for each mission type or leg including:
 - 4.7.9.1. Aircraft type.
 - 4.7.9.2. Operational environment (for example, sustained, surge or training).
 - 4.7.9.3. PAA size being modeled.
 - 4.7.9.4. Include source document for sortie rate and average duration.
 - 4.7.9.5. Attrition policy.
 - 4.7.9.6. Mission name.
 - 4.7.9.7. Mission priority.
 - 4.7.9.8. Percent of total sorties, by mission type.
 - 4.7.9.9. Mean sortie length and variation.
 - 4.7.9.10. Ratio of day to night missions.
 - 4.7.9.11. Substitute missions.
 - 4.7.9.12. Flight size (maximum and minimum).
 - 4.7.9.13. Mission cancel time. Give the length and type of delay that will be allowed before the mission will be canceled.
 - 4.7.9.14. Modeling criteria for mission-peculiar equipment.
 - 4.7.9.15. Initial external aircraft configuration.
 - 4.7.9.16. Probability and quantity of weapon expenditure.
 - 4.7.9.17. Ending configuration.
 - 4.7.9.18. Additional data. For example, when data is available on areas such as aircraft battle damage and chemical environmental impact, consider these areas for modeling.

Section C—Data Base Development

5. Preliminary Maintenance Data Analysis. Before starting work measurement activities supporting an LCOM study, do the following:

5.1. Compile historical or logistics support analysis (LSA) maintenance data for use with the LCOM data preparation subsystem. Obtain at least six months of historical data from the units or locations under study.

5.2. Perform LCOM data preparation subsystem runs to produce preliminary analysis reports. The audit and combination reports should provide information for conducting an LCOM work measurement.

Section D—Simulation

6. Use of Computer Programs. The simulation process used to validate manpower requirements consists of several computer programs. Use these programs to simulate resources such as parts, equipment, and manpower in support of an approved flying schedule. Once the scenario has been approved, obtain historical failure data, supply data, validated task times, and crew sizes. This data and scenario parameters make up the LCOM data base. The computer programs use this data base and the approved flying schedule to form an LCOM simulation model. The LCOM users guide provides all documentation required to perform the process.

7. Processing. The simulation process begins with available aircraft in the ready pool. When a mission is scheduled, the appropriate number of aircraft are selected to begin the presortie tasks. Once these tasks are complete, the aircraft are available for the mission. When the mission is completed, the model looks for aircraft system failures. These failures are based on the historical data incorporated in the data base. If any failures exist, the appropriate resources (personnel, parts, equipment) are selected and the repair activities begin. Once all repairs are completed and the normal postsortie processing is done, the aircraft are returned to the ready pool. At that time, they become available for selection to process toward a mission or an activity such as a phase inspection.

8. Reports. The LCOM system provides a number of user-requested reports. These reports provide information necessary to evaluate manpower requirements. These requirements are based primarily on the amount of resources used during the simulation process.

9. Preparation of a FIN-REP. Final reports will be prepared and formatted based on the requirements of the approving MAJCOM M & O and LG communities.

CHARLES R. HEFLEBOWER, Brig General, USAF
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Attachment 1

GLOSSARY OF REFERENCES, ABBREVIATIONS, ACRONYMS, AND TERMS

References

None

Abbreviations and Acronyms

FAC—Functional Account Code

LCOM—Logistics Composite Model

M&O—Manpower and Organization

MAF—Man-hour Availability Factor

NMCS—Not-Mission-Capable Supply

OSC—Organization Structure Code

PAA—Primary Aircraft Assigned

Terms

All terms are located in AFMAN 38-208, volume 2, to preclude duplication.